Pack 353 Pinewood Race Committee Notebook

This notebook contains the information needed to plan and run the annual pinewood derby.

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Committee Timeline

Pinewood Derby Timeline:

August:

- 1) Establish Calendar for Pinewood derby
 - a. December Pack meeting, Pass out cars and set up track for test runs.
 - b. January Pack meeting, Test and weigh cars. Next to last week of January.
 - c. January Pack Activity, Run actual race, Early start time. Last week of January.

October Pack meeting:

1) Fill all Den Coordinator positions for Pinewood Derby.

November Committee meeting:

- 1) Identify someone to pick up pinewood cars for Dec. Pack meeting.
- Make sure Santa knows he needs to be at the December Pack meeting.
- 3) Identify someone to set up track at the December meeting to show Tigers and new scouts how it works. (also a lot of fun for scouts that have already built cars)

Prior to December Pack Meeting:

- Derby Rules need to be updated for current year with dates and times. Pinewood coordinators may want to meet to make changes to rules or changing the design award categories.
- Set up schedule for Pinewood committee meetings. Minimum of one meeting in the second week of January.

Before the end of the year:

1) Send out Den assignments with description of duties to all the den coordinators. This will be reviewed in the January meeting but should be read prior to meeting.

First week of January:

- 1) Contact school to make sure Pack can get into Café at 5:30 to begin track set up and that we can begin check in with scouts at 6:00.
- 2) Pick up trophies, segments, ribbons and design award ribbons

Second week of January:

- Hold walk through and training meeting. This meeting needs to be held where the track
 can be set up so training can be done for all the stations. Min of two hour meeting should
 be planned.
- 2) Set up computers with software and training. The software will need to be loaded on both computers and names of all the boys entered into the database.
- 3) Get trophies engraved

Third Monday in January:

- 1) Pack Meeting:
 - a. Have official scales for test weigh-in.
 - b. Set up and staff a track for test runs. Make sure boys are kept away from the track and only pick up and handle their own cars. Adults are needed at both ends of the track during the test runs.
- 2) Send out pack wide email reminder of race schedule and early start time.

Pinewood Derby Night:

1) Run Pinewood derby as planned!

School Permissions Needed

School contacts

- 1) Champions rents the cafeteria until 6:30, in order for us to gain access before this time we must get it cleared. I have been contacting Viv in the office and also introducing myself to the Champions staff. They have all been great about supporting us but this needs to be done in advance, I have been contacting them about 4 weeks so they have time to make other plans.
- 2) Make sure the principal knows we will be having a longer than normal meeting, Mrs Marks has been great about supporting us when we have had special request. Make sure the principal knows we will be using the side door to the cafeteria.
- 3) Make arrangements with the custodian for
 - Getting the flags out early (forgot to have the flag ceremony again this year)
 - b. Unlocking the chairs early, these need to be moved out before the track can be set up at 5:30.
 - c. Make sure they know we will be using the side door to the café so all the other doors in that hall can be locked.
- 4) Contact the music teacher (Mrs. Henry) to borrow the sound system, In 2012 we used a guitar amplifier with a microphone she provided.
- 5) If needed we have also borrowed a digital projector from the library (Mrs. Peterson Terjeson). In 2012 we used a projector provided by Mark Rowland. Whichever projector you use I recommend getting it and setting it up with the computer that will be used at the race prior to the race to make sure you have everything needed on race night.

Check-in Team

Staffing - total 3 people

Two people are needed to man the check-in table.

One person will do weigh-ins and the other will put stickers with numbers on **TOP** the cars, hand out name tags and enter data into the computer and log name on check-in sheet. We will keep a hand written login sheet as a backup in case something should happen to the computers.

One person will be needed for the hallway table.

Check-in needs to start 30 min before the race (assuming about 50 cars). In 2012 there were 39 cars checked in between 6:00 and 6:45 PM.



Figure 1 Check in table

Job Descriptions:

Hall Director/First Check in – This person will sit at the card table at the hall. At this station all cars will be check for track clearance using the special jig. The bottom of the car should clear this jig. If the car does not clear this jig it may drag on the track and slow it down. This jig is 3/8 of an inch thick which is the specification but slightly thicker than the actual track. Racers have the option to run even if they don't clear the jig but should be aware that if they go to district they may have problems. Final check at this station is to make sure wheels and lubrication meet specifications. Name tags will with name and car number will be handed out at this station then participants will be directed to the side cafeteria door for check-in. Name tags with car numbers should be made prior to the race to speed up the check-in process. There will be basketball being played in the gym and we need to keep our people out of that area.

Car Weigh-in – This person will weigh each car using a digital scale. Place the wooden car holder on the scale and turn on the scale. The scale will automatically calibrate to zero. Then add one car to the scale. Cars cannot weigh more than 5 oz. Cars weighing less may be raced as is but if Cubs want to modify the car they can. Cars over 5 oz. must have weight removed before they can check-in. After passing these two areas pass car on to the Check-in person. Car cannot be touched by the cubs after it has passed the weigh-in station.

Once the car is checked in the Cub will be given his Pinewood segment and participation ribbon.

Note: We have not checked each car overall dimensions in the past. This is an area to consider for future races.

Check-In Data – This person will enter the car as passed in the computer and also check the car of on a paper copy of the roster (this is a backup in case something goes wrong with the jump drive used to move data between computers. They will also put a round 3/4 inch round label on the **TOP Back** of each car with the car number, if the label cannot be put on the back please put an arrow toward the front of the car so that the starters know which end of the car is the front. This label will be used for car identification during voting and staging. After all information is recorded the car is handed off to the staging person.

First Staging – After check-in the car is placed in a temporary staging rack until the cars can be transported to the race staging area where the cars will be held during the race.

Check-In Materials Needed

- 1) One small card table for placing in the hall. We used a 24X48 in folding table.
- 2) One large folding tables (Costco type 30 in x 72 in, The seats on the lunch tables get in the way.
- 3) Name Tags Should be done before the race with name and car number on them.
- 4) Postal Scale with wooden car holder
- 5) Jig for checking track clearance
- 6) ¾ in round labels for putting on the cars
- 7) Computer with race software installed, usb hard drive attached and mouse.
- 8) Paper table cover to keep graphite off of tables, Paper is better than plastic since graphite tends to adhere to paper. 30 in x 72 in. for check in table and 24X48 in. for hall table.
- 9) Tape for table cover
- 10) Rack for check-in staging of cars
- 11)Copy of rules
- 12) Login sheet
- 13) Pinewood segments
- 14) Participation ribbon
- 15) Sign for Hall to direct participants to side cafeteria door.

Staging Team

Staffing

Two people are needed to man the staging table.

Two – Three people needed pick cars up at the finish line and take them back to staging area.

Two people for counting votes for awards.



Figure 2 - Staging

Job Descriptions:

Staging table

The two people at this table will set up the tables and staging racks before the race. Pre-number the staging racks for easy identification and storage of cars. Use ¾ inch

round labels. The cars need to be kept in the racks in numerical order at all times except when they are racing, see Figure 2. During check-in the cars will be moved in boxes from the check-in to the race staging area. One person needs to be at the staging table at all times to make sure the cars do not get handled by the cubs.

Prior to the race the cubs will vote on their favorite car. The staging team should have pencils ,small squares of paper and a container to put the votes in.

During the race the staging team will load the cars for the next race into boxes with a towel or some kind of padding in the bottom. Next race information will be displayed on a projector screen. The box needs to be numbered 1 to 4 representing the track number the car will run on. Runners will take boxes to the tracks. Let track personnel load cars onto the track. Keep the cars in numerical order at all times to make it easier to find for the next race. All cars will remain in the staging area until the final race is completed.

Runners

After each race one runner will go to the end of the track with a box to pick up the cars. Work with track personnel to remove cars from track. Return all cars to the staging after they have raced.

Vote counting

After the votes have been tallied they need to be tallied during the race so awards can be made after the race is over.

Staging Materials Needed

- Two large folding tables (Costco type, The seats on the lunch tables get in the way.
- 2) Staging racks
- 3) ¾ inch stickers to number car position in racks
- 4) Pen for marking stickers
- 5) Paper table cloth to keep graphite off of tables, Paper is better than plastic since graphite tends to adhere to paper. 30 in x 72 in. for each table.
- 6) Tape for Table cover
- 7) Cardboard boxes with padding (towel) in bottom for moving cars
 - a. 2 for starting the race. These need to be labeled with lane numbers.
 - b. 2 for picking up cars at the finish line.
- 8) Voting slips of paper and pencils for selecting the cubs choice. Dan
- 9) Voting slips for design awards to be voted by committee Dan
- 10) Pencils for voting.

Track setup and Starter Team

Staffing

Two people are needed for track set up.

The same two people can also do the starting gates during the race.

One person is needed for computer, This person will man the computer for the entire race and needs to be trained on the software before the race.



Figure 3 Track Setup

Job Descriptions:

Track Setup

Track set up will be done in the cafeteria. One track will be set up as shown in Figure 3. Track set up will take about 30 minutes with three people.

Run test runs to make sure everything is connected properly.

NOTE: Get chairs out from under stage before setting up track!



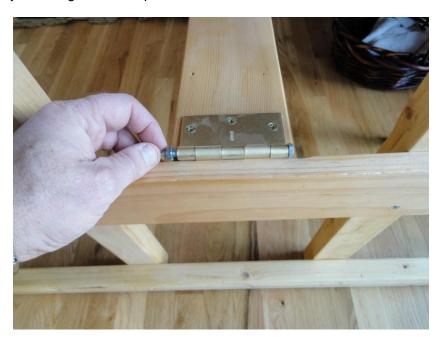
When assembling the track start with the joint closest to the start gate and work toward the finish line. Finger start all 4 screws before tightening. The screws should be able to be turned with fingers or light pressure with screw driver. Be careful not to cross thread the screws. Once all four screws are started tighten the two screws closest to the seam first. Firmly tighten but be careful not to over tighten. This will make the seam the tightest.



Once the screws are tight run your finger over the seam. The track should be flush. If it is not flush check to make sure the screws are all tight. If the joint is still not flush, remove the screws and look for debris on the underside of the joint. If the seam is still not flush after reassembly you may need to lightly sand the seam to make it flush (I have never had to do this so check carefully for obstructions first).



The next step is easiest with two people. Have one person lift the starting end of the track while the other puts the legs down. WATCH YOU FINGERS! The support legs are both hinged so just swing them into place.



The last step for the track assembly is to connect the large leg at the start gate to the support bar with a bolt through the connecting hinge. That's it, ready to hook up the timer.



Figure 4 Start gate cable storage

The start gate/reset cable is stored under the first section of track. Undo the straps that hold the cable in place and stretch to the end of the track. There will be excess cable so tuck it under the track where there is room.



Figure 5 Finish Line sensor assembly

The finish line sensor is attached to the track with a thumb screw on each side of the track. Make sure the connection cables are on the same side of the track so they can be plugged together once the thumb screws are tight.

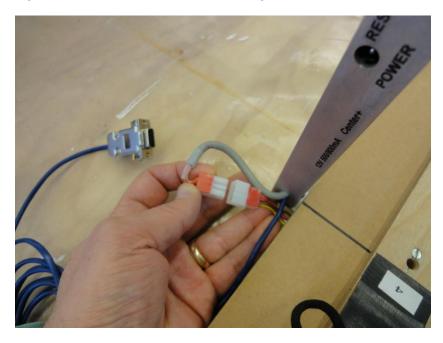


Figure 6 Finish Line sensor cable connection

Plug in the finish line sensor. Make sure the red marks are matched up.



Figure 7 Start line cable and display extension cable connection

Plug in the start line/reset cable (top blue cable). Then plug in the 3 ft finish line cable. This is the flat gray cable. Match up the red marks when plugging in.



Figure 8 Finish line power supply connetion

Plug in the AC power adapter to the finish line sensor.

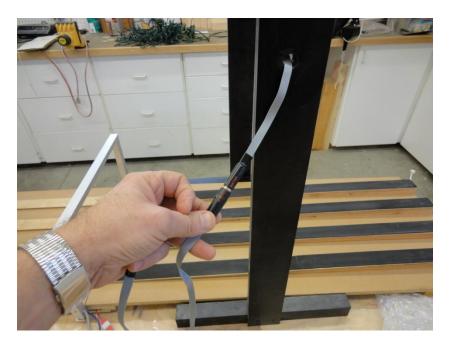


Figure 9 Digital display connection

Plug the other end of the display cable into the digital display. Match up red marks on the connector.



Figure 10 Bolting Display to track

There are two long screws used to bold the display to the track to prevent it from betting knocked over during the race.



Figure 11 Start line cable management clips

Between the start and finish line are white clips for the start line cable. Put the cable in these clips to keep it off the floor.



Figure 12 Timer control cable, Serial to USB conversion cable

The blue cable that comes off of the finish line has a serial cable connector. Connect the short one foot USB adapter cable. This will allow the track to be connected to any computer with a USB connections. There are two USB repeater cables to be used between this point and the race computers.

NOTE: The computer connected to the USB cable will need to have a special driver installed. See computer setup section.

Race Starters

The starters man the starting gate on each track. The starting gate consists of wooden dowels that hold the car in place until the start lever is pulled. Then a rubber band pulls the dowels down allowing the cars to race down the track. The starters need to raise the dowels and lock the handle in place before loading any cars. Staging is set up directly behind the starting gate so that cars can be handed directly to one of the starters. Two starters are used so that one person can hold the box and verify car numbers from the computer projector while the other one loads them on the track and will control the starting gate. Load the cars on the track one car at a time making sure the front end is touching the start pin in the middle of the car and that the cars are centered on the track with no wheels touching the center guide. When the announcer says Ready, Set, Go pull the start lever and watch the cars race down the track. The starters should watch each race and make sure the cars continue to roll down the track smoothly. If you see or hear anything unusual take the time to check the track and look for debris or problems with the track.



Figure 13 Starting gate

Figure 14 Finish line with pillow bumper

Track setup and Starter Materials Needed

- 1) Tracks with all screws to assemble.
- 2) Pillow for end of track
- 3) Track timer and all connection cables
- 4) Electrical Tape (for emergency only)
- 5) Duct Tape to tape down wires for safety
- 6) Computer with mouse, Have used laptops in past

- 7) Projector, cables and screen (we used the stage backdrop and it seemed good)
- 8) Extension power cord for track and computer, min of 3 plug-ins.
- 9) Table and chair for Computer (small folding table will work)
- 10) Stand to hold and elevate Projector
- 11)One pillow for bumpers at the end of the track, make sure the pillow is tied in place to prevent movement.
- 12) Checker flags for barrier around the tracks. See picture for setup.
- 13) Screw Drivers for track screws
- 14) Spare Rubber bands for starter gate (should be replaced each year)
- 15) Race computer with software loaded (Used laptop in 2010,2011)

Computer Setup

Staffing

1-2 people

Job Descriptions:

Set up computers

The computers are need to be set up prior to the race and checked out with the track to make sure everything is configured correctly. We have used two laptops in the past so that one could be used for check in and the other could be used for getting the track set up prior the race. Data has been transferred between computers with either a portable hard drive or a jump drive.

- Load GrandPrix Race Manager software onto computers. The original disk should be stored in the carrying case for the track electronics. Installation instructions are with the CD. Note: set this up in the user account you plan to use at the race.
- 2) In order for the computer to talk to the track hardware a special serial to USB driver must be installed on your computer. The correct driver is Prolific PL-2303 and can be found at http://www.prolific.com.tw/eng/downloads.asp?id=31. (I recommend installing this on both computers and check it out so you have a backup computer at the race)

NOTE: The Serial to USB driver <u>does not</u> do a good job of cleaning up after itself when disconnected. As result every time the track is connected to the computer a new COM port will be assigned. After a couple of times the computer can get confused and nothing will work right. Rebooting the computer just before the track is connected, and anytime it is reconnected will clear all COM ports. Failure to do this can result in the software not recognizing the COM and USB ports on the computer.

3) Launch the GrandPrix Race Management software. The screen should look like this.



- 4) Click the short cut icon for Quick Start Tutorial. This will allow you to run the Basic Setup Wizard to get the software set up.
 - a. The first page will ask if you are running with a timer and which timer. The timer to select is "The Champ(Best Track)/SmartLine (e TekGadget)" Our timer is a SmartLine made by e TekGadget.
 - b. The next page asks how you want to run the race by times or points. Select times.
 - c. The next page is for to set up for the track. Estimated number of racers should be Minimum = 30, Maximum = 60. This is only an estimate. Number of track lanes is 4 and answer YES to have each car go down each lane.
 - d. Next page select Subgroup = YES.
 - e. The last page is suggested race schedule methods, we use Perfect-N. Click the finish button at the bottom.
- 5) Next a screen will come up with Quick Start Tutorial. Follow the steps for setting up. We have not used any of the optional awards setups in the past. After reading close this window.
- 6) Click on the Create Race Data File short cut icon. To check out the set ups and to use for training I usually create a Committee data file which will only have 4-5 names and cars in it. Then create a second data file for the Pack race. As soon as you create a data file it becomes the one in use, answer no to the question about do you want to go back through the setup wizard again.
- 7) Click the setup Software Icon.
 - a. Under General tab

- i. Race Vehicle = Race Car
- ii. Race Registration Custom field = Car Name
- iii. Number of lanes should be 4
- iv. Lane Labels = Numbers
- v. Display Names = First Name Last Name
- vi. Use Subgroups should be checked
- b. Under Schedules Tab Nothing needs to be selected
- c. Under Racing Tab
 - i. Track Records Do not check this box
 - ii. Scale Speed = MPH
 - iii. Track Length = 29.0 ft
 - iv. Vehicle Scale = 1 inch = 25 inches
 - v. Auto heat Advance should be selected and Time delay should be 10 seconds.
- d. Under Standings tab
 - i. Race Scoring Method = Time
 - ii. Standings Determination = Cumulative of all heats
 - iii. Other Standing Options Select be able to exclude racers
 - iv. Tie Breaking Don't worry about ties
- 8) Click the Setup Reports Icon
 - a. This area you can play with how you wish. It will not affect the racing only the reports that are generated.
 - b. Under report Titles, these will go on all reports so something like 2012 Pack 353 Pinewood.
 - c. You should check the box under the general tab that is for Only Frist Name and Last Initial. If you plan on publishing any of the race reports to the web you do not want last names on the reports.
- 9) The hardware setup tab needs to be run after the computer is connected to the track hardware. If it is not connected you will be an error message saying NO COM ports were found.
 - a. Use this tab to setup and test the track, if you have questions check the help menus.
 - b. Under Timer tab
 - i. Make sure SmartLine is checked
 - ii. Make sure a COM port number comes up in the COM Port: window. Ideally this should be 4 or less.
 - iii. Maximum time set to = 9.9999
 - iv. Photo finish is not used (unless someone wants to try it out)
 - v. Make sure all the Lanes are checked in use.
 - c. Solenoid Start Gate is not used
 - d. Light Tree is not used
- 10) Click the Define Race Groups Tab
 - a. Click the Add Group button, Name it Pack353
 - b. Select the Pack353 Group by highlighting with the mouse and then click the add sub group, Create one subgroup for each Den.

- c. Click Save when Done
- 11) Skip the Define Awards
- 12) Click the Register Racers Tab and enter all the boys in the Pack, make sure sub groups match den numbers. Car name, use Den number and it will be displayed on the video display. Leave passed and excluded blank and they will be filled in at check-in. This data can be manually entered or generated in an excel spread sheet and imported. What I found easiest this year was to export last years file, and then updating by den based on Packmaster.
- 13) When all the race data is ready after check in, load the file using the file menu. Then select the Create race Schedule tab.
 - a. Make sure the Perfect N button is selected.
 - b. Click the Schedule Icon on the right hand of the page
- 14) Select the Racing Icon
 - a. Close the start gate on the track
 - b. Click the ready timer button. This will turn red until the system is ready. Then it will turn Yellow when ready to start the race.
 - c. Say go and have FUN
 - d. Races can be rerun by selecting the Heat that needs to be rerun and clicking the rerun race button. Practice this before the race!

Note: Recommend that whoever is going to be running the computers get familiar with the software before the race!

Finish Line Team and seating setup

Staffing

2 finish line people are required to make sure scouts stay away from finish line and to pick up the cars and load them into the return boxes.



Figure 15 Finish Line

Job Descriptions:

Seating Setup

Seating for kids needs be set up along the sides of the tracks using mats from the gym if available as shown in Figure 16. Additional seating can be set up behind the mat for adults.



Figure 16 Track and seating setup

Finish Line

During the race two people will be placed at the finish line. Their job will be to keep people away from the track and to load the cars from the finish line for return to the staging area. The finish line personnel are the ONLY PEOPLE ALLOWED TO TOUCH CARS. Judges also need to watch the bumpers at the end of the track and keep the pillows positions tight against the track see Figure 14. If the pillows get out of place cars can go off the end of the track and damage the wheel alignment. Also keep an eye on the cars as the travel down the track. If at any time cars appear to jump or bounce check the track for foreign materials.

Materials Needed

- 1) Flag and poles to go around the track
- 2) Mates for around the track
- 3) Chairs

Announcer

Staffing

One highly energized person

Job description:

Before the race the announcer will need to set up the PA system. The announcer will be located at the finish line with the ability to read the computer projection, See photo Figure 17. The announcers job will be to bring excitement to the race! They will also be calling out the starting cars on each track and announcing the winners. At the end of the race the announcer will award the winning trophies.



Figure 17 Announcer Location

Announcer Materials Needed

- 1) Speaker System with microphone
- 2) Lots of enthusiasm
- 3) Maybe some backup material in case of emergency repairs.

Repair Station/Pit Crew

Staffing

One person

Job description:

Set up and man a table for scouts to adjust weight of make last minute repairs prior to checking in. It is recommended that this person let parents and scouts themselves do the modifications.

Pit Crew Material:

- 1) Cafeteria Table
- 2) Paper table cover to keep graphite off of tables, Paper is better than plastic since graphite tends to adhere to paper.
- 3) Tape for table cover.
- 4) Cordless Drill
- 5) Drill bits
- 6) Crazy Glue
- 7) Assortment of lead for adjusting weight
- 8) Wire Cutters for Lead
- 9) Graphite

Pre Race Activity

Staffing

One or Two people with QUIET games.

Job description:

Provide activity to keep cubs entertained while check in is being done. In 2012 a memory game was used where objects were placed on a tray and then shown to the boys. They were given a short time to view and then one item was removed. The object was to guess which item was removed.



Figure 18 Pre Race activity

Pre Race Materials Needed

1) Activities and materials for about 30 min.

Music

Staffing

1 person

Job description:

To provide pre race music. This has been planned for the past two years but due to oversights and technical issues we have not had music. The idea is to add some additional energy and fun while check in is still going on. An Ipod or CD player could be used and could be connected into the amplifier system. Make sure this is checked out prior to the race so that the correct connectors are available.

Materials Needed:

- 1) Some kind of music device (Ipod or CD player)
- 2) Cables to connect to amplifier
- 3) Music appropriate for both scouts and the race. Here is what I had but did not get to use.
 - a. 409 Beach Boys
 - b. Life is a Highway Rascal Flatts (Cars sound track)
 - c. Drag City Jan and Dean
 - d. G.T.O. Ronny and the Daytonas
 - e. Little Old Lady From Pasadena Jan and Dean
 - f. Little Deuce Coup The Beach Boys
 - g. Hey Little Cobra The Beach Boys

Flag Ceremony

Staffing

Minimum of 3 boys

Job description:

Present and dismiss the flags and lead in the pledge of allegiance. Flags will be posted by the stage.

Materials Needed

Flags will need to be out of locked storage closets before the race starts.

Cafeteria Layout

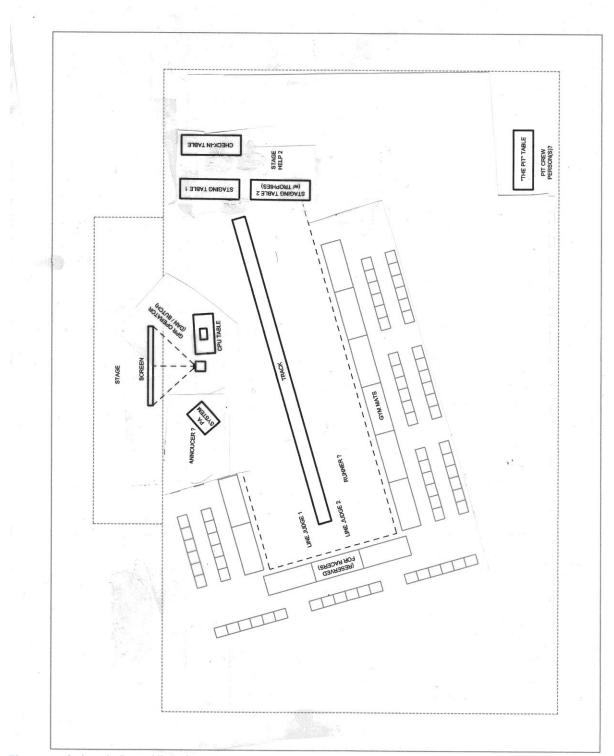


Figure 19 Cafeteria Race Night Layout



Figure 20 Photo of Track Layout

Awards

Staffing

One person

Job description:

Purchase all the awards needed for the race. All awards have been purchased at the scout store on Nato Parkway. The Trophies need to be engraved, we used Crown Trophy.



Pinewood Ribbons, need enough for one per boy to be given at check-in.



Trophies – 4 place trophies are needed. One 9 inch for first place, one 8 inch for second place and two 7 inch for third and fourth place.

Engraving was done at: Crown Trophy - 5585 Southwest Arctic Drive, Beaverton (503) 626-1125: Cost \$2 per trophy.

Engraving was as follows:

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First Place Pack 353 2012 Pinewood Derby

Second Place Pack 353 2012 Pinewood Derby

Third Place Pack 353 2012 Pinewood Derby

Fourth Place Pack 353 2012 Pinewood Derby



Pinewood Derby Car Medal

Item: PWDMEDAL

Availability: In Stock

PRODUCT NAME	PRICE	QTY
Pinewood Derby Car Medals (Blue)	\$2.99	0
Pinewood Derby Car Medals (Red)	\$2.99	0
Pinewood Derby Car Medals (White)	\$2.99	0

Each features a model derby car hanging from a red-white-and-blue grosgrain ribbon. It's ready for pinning! Car medallion -- in choice of red, white or blue -- is cast in lead-free zinc alloy and decorated with water-based, baked enamel paint. Medal measures 1 ½ inches x 3 inches overall.

Ribbons – These will be given to the design awards. 7 total ribbons will be needed with a mix of car colors. Awards will be given as follows:

- o Design awards to be given pinewood pins.
 - Scouts Choice to be chosen by the Cubs
 - Scout Master's Award
 - Wackiest Design
 - Most Original
 - Most Patriotic
 - Most Realistic Looks like a real car
 - Best Sports Theme Blazers, Duck, Beavers....

Pinewood Derby Segment



The Pinewood Derby Segment is awarded to boys who build and race a car in a pack-organized pinewood derby event.

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Pinewood Derby Segments- One per boy will be needed to be given out at check-in.